

A New Species of Fossil *Oreohelix*

(Pulmonata : Oreohelicidae)

from Otero County, New Mexico

BY

ARTIE L. METCALF AND CELINDA R. CREWS

Department of Biological Sciences, University of Texas at El Paso, Texas 79968

(4 Text figures)

THE SPECIES OF FOSSIL PULMONATE land snail described herein has been found at a single locality in deposits of Pleistocene age, in the southeastern part of the Sacramento Mountains, Otero County, New Mexico.

OREOHELICIDAE Wurtz, 1955

Oreohelix Pilsbry, 1904*Oreohelix penascana* Metcalf and Crews, spec. nov.

(Figures 1 and 2)

Diagnosis: A small, greatly depressed, carinate species, somewhat discoid in shape with ascending upper lip on body whorl of mature specimens, widely umbilicate with weakly developed growth lines dorsally and faint spiral lirae ventrally.

Description of Holotype: Shell strongly depressed; 11.6 mm in diameter and 4.0 mm in height; comprising 4.15 whorls; upper lip ascending, with body whorl, thus, expanding dorsally to height of apex; carinate peripherally, with keel at about 0.75 height of body whorl; aperture ovate horizontally, 4.9 mm wide and 3.9 mm high, oriented at 65° to vertical axis of shell; umbilicus broad and shallow, 4.2 mm wide, contained 2.76 times in diameter; suture moderately impressed, becoming deeper on younger part of body whorl; dorsal surface generally smooth with growth lines weak and irregularly spaced on earlier whorls, becoming moderate to strong on body whorl and with faint spiral lirae on body whorl; ventral surface smooth, except for low growth lines and weak spiral lirae; earliest 2.25 whorls of dorsal surface pale grayish-white, grading to pale gray mottling on whitish background by 2.75 whorls and to white on youngest part

of body whorl; ventral surface generally pale grayish-white with faded tan color band (barely discernible) below keel on body whorl.

Variation: (Based on 15 paratypes). Measurable shells range from 8.6 to 14.2 mm in diameter (mean 10.1 mm) and 3.5 to 5.4 mm in height (mean 4.1 mm). Discoidal shape and ascension of the body whorl become more marked with maturity. The peripheral keel is more strongly developed on younger whorls. Ventral lirae are fairly strongly developed in some specimens. Original coloration is poorly preserved but a few specimens show faded tan areas on the dorsal surface of the older whorls, as a band below the keel, or generally over the ventral surface.

Types: The holotype is National Museum of Natural History 784663. Paratypes include Dallas Museum of Natural History 5365 and University of Texas at El Paso 2189.

Etymology: The name *penascana* derives from Penasco Canyon, site of the type locality.

Locality: New Mexico, Otero County; Sacramento Mountains; northwest wall of Penasco Canyon, 4.8 km SSW of junction of Penasco and James canyons at Mayhill; from sediments exposed in road cut on NW side of New Mexico Highway 24/130; 32°51'06" N, 105°30'29" W; SE $\frac{1}{4}$, NE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 9, T. 17 S, R. 14 E; 2075 m elevation.

Geology: Shells occur in a rocky hillslope colluvium with matrix of pinkish silts, conformable below a heavily indurated (calichified) caprock. Deposits are unconformably overlain, to the south, by less indurated colluvium with angular stones (frost rubble) and with silty matrix of grayer color. This overlying deposit is judged to be late



Figure 1

Oreohelix penascana Metcalf & Crews, spec. nov.
Holotype; USNM 784663; side view; 11.6 mm diameter



Figure 2

Oreohelix penascana Metcalf & Crews, spec. nov.
same specimen as in Figure 1; umbilical view



Figure 3

Oreohelix socorroensis Pilsbry, 1905
Fossil shell from Pleistocene deposits, 4.5 km NNE of Mayhill,
Otero County, New Mexico; 11.8 mm diameter; side view



Figure 4

Oreohelix socorroensis Pilsbry, 1905
same specimen as in Figure 3; umbilical view

Wisconsinan (Pleistocene) in age and suggests that *Oreohelix penascana* occurs in sediments no younger than Early Wisconsinan in age. The development of an indurated caprock also indicates an age greater than late Wisconsinan for the sediments containing *O. penascana*.

Comparisons: *Oreohelix penascana* is probably most closely related to *Oreohelix socorroensis* Pilsbry, 1905. However, several distinctive features separate shells of the two species. The shell of *O. penascana* is more strongly depressed and discoidal in shape. Shells of *O. socorroensis*

(Figures 3 and 4) lack the ascending body whorl of *O. penascana*, have a narrower, deeper umbilicus and better developed lirae.

Oreohelix socorroensis is widespread as a fossil in the Sacramento Mountains in deposits of late Wisconsinan and early Holocene age. As noted above, it seems likely that *O. penascana* lived at an earlier time than *O. socorroensis*. The rarity of *O. penascana* may indicate that it was never of widespread occurrence or that conditions were not favorable for its preservation as a fossil or for its subsequent exposure.